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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,955	10/17/2003	Robert Alvin May	IPIN-0002	9856

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EXAMINER	
DUNN, DARRIN D	
ART UNIT	PAPER NUMBER
2121	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,955	MAY, ROBERT ALVIN	
	Examiner	Art Unit	
	DARRIN DUNN	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *47,48 and 50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *50* is/are allowed.

6)☒ Claim(s) *47 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/23/10 | 8/04/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Office Action is responsive to the communication filed on 03/23/2010.

2. Claims 47-48 and 50 are pending in the application.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/23/2010 has been entered.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted[s] on 8/4/10 and 3/23/10 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Amendment

5. The amendment, filed 03/23/2010, is fully responsive and has been entered. The objection to the specification with regard to 'cluster internal communication mechanism' is removed based on applicant's arguments, pages 5/13-6/13. The provisional double patenting rejection is also removed based on cancelling claim 45.

Response to Arguments

6. Applicant's arguments with respect to claim 48 have been considered but are moot in view of the new ground(s) of rejection. Claim 50 stands allowed based on the articulated differences with regard to 'mean plus' limitations. The indicated allowability if claim 49 is withdrawn based on a newly discovered reference, Kompella et al. (USPN 7359377).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinker et al. USPN 20040098490) in view over Folkes et al. (USPN 2003/0218982) in view over J. Moy (Hitless OSPF Restart | February 2002), and in view over Dinker et al. (USPN 20040098490) in

view over Lin et al. (USPN 20030154431) and in further view over Kompella et al. (USPN 7359377)

9. As per claim 47, Dinker et al, as modified (supra claim 45, prior office action) teaches a routing component configured for use in a cluster of network enabled devices having at least a first network enabled device with the routing component and a second network enabled device with a second routing component and a network manager, the network manager external to and communicably coupled to the routing component and to the second routing component, each of the network enabled devices in the cluster configured to communicate with network devices external to the cluster through a single network address, each of the network enabled devices in the cluster configured to operate in parallel and independently of each other, the routing component comprising:

a configuration manager module (21)configured to store configuration information relayed from a configuration manager module of the second routing component (24) (e.g., as set fort in the application, a configuration manager is interpreted as storing state information. The active OSPF, as per paragraph 0029, sends messages describing its current dynamic state to a backup OSPF; and

a dynamic routing module (24);

the routing component (22) configured to apply the configuration information through the interaction of the configuration manager module (24) and the configuration manager module (23) of the second routing component (21) to an instantiation of the dynamic routing module operating in the routing component (22) (Figure 2B-222, 224 | [0028-0029]);

the dynamic routing module (24) configured to execute in response to a command from the network manager, and further configured to execute according to the configuration information stored in the configuration manager module upon an unplanned failure of the second dynamic routing module (23) of the second routing component (21) ([0028-0029] e.g. supra claim 45 discussion for the implementation of a network manager); and

the routing component further configured to transmit a hitless restart event responsive to the unplanned failure of the second dynamic routing module of the second routing component, the hitless restart event signaling network enabled devices external to the cluster to continue forwarding packets to the cluster (e.g. supra claim 45 discussion and/or below for the use of a hitless restart mechanism applied to a redundant router)

Therefore, at the time the invention was made one of ordinary skill in the art would have motivation to modify Dinker et al. to be utilized with the router configuration taught in Folkes et al. Dinker et al. teaches implementing a cluster router in communication with a plurality of clusters comprising internal nodes operable to receive incoming messages based on a single network address. Folkes et al. teaches applying a redundant routing configuration. It would have been obvious to have implemented a redundant routing configuration as part of a cluster router, as per Dinker et al., so as to implement fault tolerant techniques to ensure greater system reliability.

However, Dinker et al., as modified, does not teach a network manager external to the system and whereby the manager issues a command for the first routing component to store information from the second routing component. Lin et al. teaches a network manager configured to synchronize all configuration information of the network interface modules from the primary to

the backup agent module, i.e., the pertinent problem of using an entity to issue a synchronization command is illustrated ([0006]). Moreover, as per MPEP 2144.04, V. Making Portable, Integral, Separable, Adjustable, or Continuous, C. Making Separable, it is obvious that unless the location of the network manager module produces an unexpected benefit, use of a network device (e.g., network manager) may be internal or external to the routing configuration depicted in Folkes et al.

Therefore, at the time the invention was made, it would have been obvious to employ a separate entity, i.e., network device, to issue a synchronization command such that a first router/controller synchronizes its state information with that of a second router/controller. Although Lin et al. is from a different field of endeavor, it solves the pertinent problem of using a hardware device that embodies an synchronization function. Although the elements to which it synchronizes differ, a skilled artisan could readily implement such a hardware device to issue a synchronization command to redundant routers.

However, Dinker et al., as modified, does not teach the following. Folkes et al., as modified, teaches a first routing component configured to forward packets to a cluster, as per Dinker et al., but does not teach a hitless restart event. J. Moy teaches transmitting the aforementioned limitations ([page 2 lines 1-5] e.g., router announces intention to perform a hitless restart, and asking for a "grace period.", i.e., transmitting a hitless restart, and neighbors continue to announce the restarting router in the their LSAs as if it were fully adjacent, i.e., continuing to forward packets. It is implied that maintaining adjacency during a failover will function to continue routing packets).

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to implement a hitless restart by incorporating the OSPF enhancements as taught by J. Moy. Routers implement a separation of control and forwarding functions as to allow packet forwarding in the event control software is restart/reloaded. Given the potential that the control software in Folkes et al. may be restarted, it would have been advantageous to modify Folkes et al. to further maintain its data forwarding capability by implementing a hitless restart. One of ordinary skill in the art would have been capable of applying the known method of hitless restart as to further achieve seamless data forwarding as taught by Folkes et al. ([0026 lines 4-6])

However, Dinker et al., as modified, does not teach the routing component further comprising a communication module (e.g., interpreted as a software) configured to receive a reply from another routing component associated with the receipt of a hitless restart. Kompella et al. teaches a graceful restart (]Figure 8]) for use for use in routing components (e.g., peer label switching routers) employing a communication module ([Figure 8 –element 830]) configured to receive a reply ([Figure 8] e.g., peer to peer communication) associated with receipt of a hitless restart ([Figure 8], [Col 10 lines 35-67])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to advertise the graceful restart capability of a node using a router in a peer to peer network. Dinker et al. teaches a redundant router configuration employing a hitless/graceful restart capability. Kompella et al. teaches exchanging the graceful restart capability in a peer to peer network. Therefore, it would have been obvious to one of ordinary skill in the art to exchange a graceful restart capability to maintain label switched paths using peer to peer communication (e.g., hello/reply)

10. As per claim 48, Folkes et al. teaches teaches the method of Claim 45 wherein the routing is performed under an OSPF routing protocol ([Figure 2A-element 23])

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN DUNN whose telephone number is (571)270-1645. The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DD/
08/11/10

/Albert DeCady/
Supervisory Patent Examiner
Art Unit 2121